

May 15, 2014

EV Business Models Study Overview

Nick Nigro and Matt Frades

Staff Workgroup Kickoff Meeting



CENTER FOR CLIMATE
AND ENERGY SOLUTIONS

C2ES.ORG



- **Independent, nonpartisan, nonprofit organization**
- **Working to advance strong policy and action to address the twin challenges of energy and climate change**
- **Founded in 1998 as the Pew Center on Global Climate Change**
- **Became C2ES in 2011**

Business Environmental Leadership Council (BELC)



C2ES's Relevant Experience

C2ES has extensive relevant experience in business model development for EV charging that it will leverage



- **Goal: Bring together automakers, electric utilities, policymakers, and environmental groups to develop and implement consensus approaches to accelerate electric vehicle deployment nationwide**
- **PEV Dialogue Group: convened national network to coordinate policy development and share information**
- **Conducting cutting edge research, stakeholder engagement and advising, policy tracking with interactive maps, and weekly newsletter**
- **Major Accomplishments**
 - 2012: Published report *An Action Plan to Integrate Plug-in Electric Vehicles with the U.S. Electrical Grid*, a roadmap to enabling a national EV market
 - 2013: Created PEV Action Tool to help state transportation departments determine goals for EV deployment and chart out path for reaching goals
 - 2014: Published report, *A Guide to the Lessons Learned from the Clean Cities Community Electric Vehicle Readiness Projects*, summarizes lessons learned from 16 groups that received Energy Department grants to advance the deployment of electric vehicles



- **Goal: Develop pilot projects to demonstrate new business models for alternative fuel vehicles and fueling infrastructure**
 - Apply lessons learned from use of financial mechanisms to accelerate deployment of cleantech in other sectors
- **Convened AFV Finance Advisory Group, a diverse group of finance professionals, automakers, infrastructure providers, and public officials**
- **Conducting original research and stakeholder engagement and advising**
- **Major Accomplishments**
 - 2013: Published report, *Alternative Fuel Vehicle & Fueling Infrastructure Deployment Barriers & the Potential Role of Private Sector Financial Solutions*, a seminal report on role of private finance in accelerating EV deployment

C2ES Transportation Program Partners



PEV Dialogue Initiative



DAIMLER



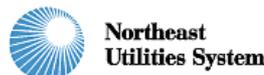
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GEORGETOWN CLIMATE CENTER
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Union of Concerned Scientists
Citizens and Scientists for Environmental Solutions



U.S. Department of Energy



AFV Finance Initiative

SIEMENS



Google



DBL INVESTORS
DOUBLE BOTTOM LINE VENTURE CAPITAL

TOYOTA



Project Approach

Importance of business model assessments and the potential role of private finance in advancing EV charging networks



- **Deployment of clean transportation technology requires significant capital investments**
 - Governments actively seeking ways to multiply the impact of public dollars and unlock greater private investment
- **EV infrastructure gap (public, workplaces, and multi-unit dwellings) must be bridged for robust EV market**
- **Barriers to bridging infrastructure gap**
 - Residential electricity competition
 - A small market
 - Cost of charging stations
 - High cost of capital
- **Business models can capture value of EV charging networks**
 - Public-private finance programs, including public-private partnerships
 - New business arrangements



- **Private finance can leverage small public investments and overcome market deficiencies**
- **Existing financial mechanisms have helped accelerate deployment of cleantech in other sectors**
 - Energy service providers have accelerated deployment of energy efficiency technologies in buildings
 - Public-private finance programs have leveraged public dollars to attract private investment
- ***Washington can be first to use innovative finance to advance EV charging networks***



Market Barriers

Low near-term demand for EV charging infrastructure

- **Market Effects:** Limited private investment in charging projects, depresses demand for EVs, etc.
- **Solutions:** Longer loan terms, delayed loan repayment

(short to medium term)

Financial Barriers

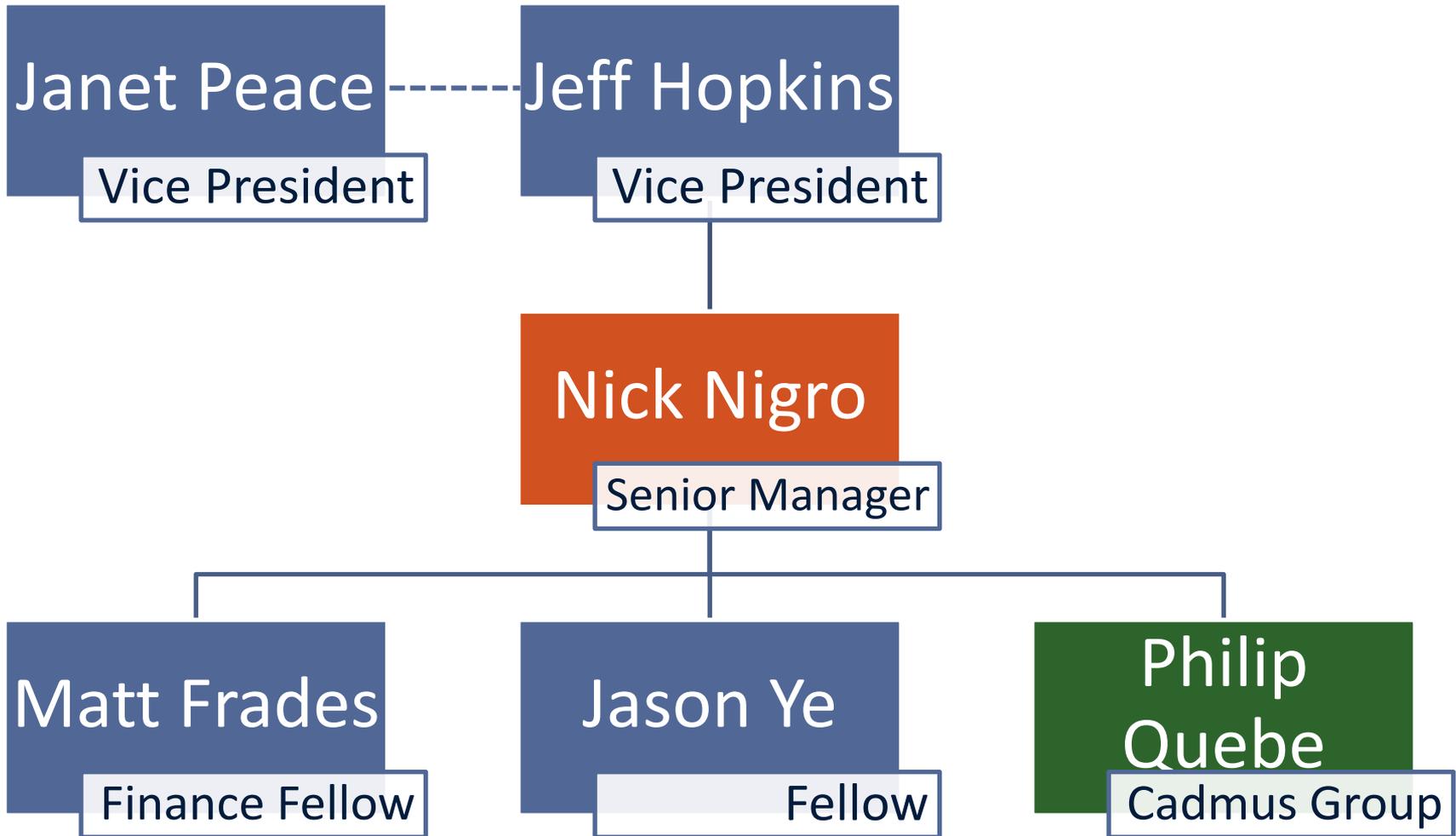
Loans cannot be easily resold

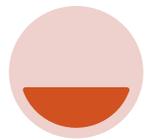
- **Market Effects:** Projects appear too risky, thus increasing cost of capital
- **Solutions:** Standardized loan structures, public buying and holding of loans

(medium to long term)

C2ES's Project Management

Project Team, Project Timeline, and working with Staff Workgroup and
Advisory Panel

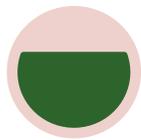




Evaluate Current Status of EV Charging in Washington

- Establish a stakeholder network
- Construct Public Charging Network Database
- Create interactive maps for charging suitability assessment
- Provide insights into role of public charging networks in encouraging EVs
- Summarize findings

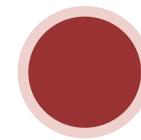
May – August



Develop Business Models

- Leverage C2ES's AFV Finance Initiative
- Conduct Business Model Workshop
- Create 2-3 Business Model Summaries

July – November



Identify Public & Private Roles

- Execute financial analysis on business model viability
- Identify public sector role in addressing barriers to private investment

October – December

-  Advisory Group Meeting
-  JTC Presentation

May 2014 – March 2015



- **In-person Meetings**

- 3 meetings with Advisory Panel, including business model workshop
- 3 meetings with JTC

- **Conference Calls**

- Twice-monthly recurring calls on project progress
- Special calls ahead of in-person meetings
- Regular call updates with Advisory Panel

- **Microsoft Office 365 Toolkit**

- Microsoft Lync and Skype for online chat, video calls, and/or webinars
- Microsoft SharePoint Project Website (file sharing, calendar, contacts)



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FOR MORE INFORMATION

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